

*Sub*

*Q*

**SEARCHED**

**INDEXED**

**MAILED**

**FILED**

---

What is claimed is:

1. A connector for electrically connecting a chip and a conductive contact pin, comprising:  
the chip being comprised of a nonconducting top layer, a nonconducting bottom layer and a conductive sheet situated in between the top layer and the bottom layer;  
the chip including a passageway at least partially therethrough; and  
the passageway including means for holding the pin in contact with the sheet and for restraining the pin from translating with respect to the chip.
  
2. The electrical connector as defined in Claim 1 wherein:  
the holding means includes means for applying a frictional force against the pin, whereby  
a withdrawal of the pin from the passageway is resisted.
  
3. The electrical connector as defined in Claim 2 wherein:  
the pin has a lateral side; and  
the holding means includes means for applying a normal force against the side, whereby  
the frictional force is generated when a force is applied to the pin in a direction that would, in the absence of the frictional force, withdraw the pin from the passageway.
  
4. The electrical connector as defined in Claim 2 wherein:  
the passageway includes an opening through the sheet; and  
the opening has a breadth that increases when the pin is inserted therethrough.

TO BE FILED

- Cmt  
Sub  
Ad*
5. The electrical connector as defined in Claim 4 wherein:  
the passageway is further comprised of a top hole through the top layer,  
and a bottom hole through the bottom layer; and  
the top hole, the bottom hole and the opening are aligned.
  6. The electrical connector as defined in Claim 5 wherein:  
the opening, when unstressed, has an unstressed minimum breadth;  
the pin is cylindrical and has a diameter;  
the unstressed minimum breadth is smaller than the diameter of the pin;  
the opening has a periphery; and  
the sheet is comprised of a flexible material so that the periphery can  
deflect into the bottom hole when the pin is inserted into the opening.
  7. The electrical connector as defined in Claim 5 wherein the sheet is  
composed of a flexible material so that the breadth varies responsive to the  
contact pin being inserted therethrough.
  8. The electrical connector as defined in Claim 7 wherein:  
the breadth varies between an unstressed minimum breath and a stressed  
breath, with the stressed breath being greater than the unstressed minimum  
breath;  
the contact pin has a diameter greater than the unstressed minimum  
breadth; and  
the breadth increases to the stressed breadth in response to the contact pin  
being inserted into the opening.
  9. The electrical connector as defined in Claim 8 wherein the opening is  
formed by a plurality of fingers extending centripetally from a section of the  
sheet that circumscribes the opening.

- Cont  
Sub  
A2*
- DEPARTMENT OF TRADES AND INDUSTRIES*
10. The electrical connector as defined in Claim 8 wherein:  
the top hole has a top hole diameter and the bottom hole has a bottom hole diameter; and  
the top hole diameter is smaller than the bottom hole diameter.
  11. The electrical connector as defined in Claim 1 comprising means for preventing rotation of the pin with respect to the chip.
  12. The electrical connector as defined in Claim 1 further comprising:  
a plurality of passageways through the chip; and  
a harness including a plurality of the pins spatially arranged so that each of the pins can be simultaneously aligned with one of the passageways, respectively, whereby  
all of the pins can be simultaneously inserted into passageways, respectively, and  
the harness is prevented from translating or rotating relative to the chip by the holding means when the contact pins are respectively inserted into the passageways.
  13. The electrical connector as defined in Claim 12 wherein:  
each holding means is electrically isolated from the other holding means and is electrically connected to a respective chip element, whereby  
each chip element is electrically connected to a respective contact pin when the contact pins are respectively inserted into the passageways.
  14. The electrical connector as defined in Claim 1 wherein:  
the chip is from 0.5 to 2.0 millimeters thick; and  
the sheet is from 0.05 to 0.2 millimeters thick.

- CONFIDENTIAL - TRADE SECRET*
15. A connector for electrically connecting a chip and a conductive contact pin, comprising:
- the chip including a nonconducting top layer, a nonconducting bottom layer, and an electrical element;
  - a conductive sheet situated in between the top layer and the bottom layer, and being electrically connected to the element;
  - the top layer having a top hole therethrough, and the bottom layer having a bottom hole therethrough, with the top hole and the bottom hole being in alignment and comprising an aligned hole pair;
  - the sheet having an opening aligned with the aligned hole pair; and
  - the opening including means for holding the pin in contact with the sheet when the pin is inserted into the opening, whereby
    - the pin is prevented from translating with respect to the chip and an electrical connection between the pin and the element is established and maintained.
16. The electrical connector as defined in Claim 15 wherein:
- the chip is from 0.5 to 2.0 millimeters thick; and
  - the sheet is from 0.05 to 0.2 millimeters thick.
17. The electrical connector as defined in Claim 15 comprising:
- a plurality of the aligned hole pairs and openings; and
  - a harness including a plurality of the pins spatially arranged so that each of the contact pins can be simultaneously aligned with one of the aligned hole pairs and openings, whereby
    - each of the contact pins can be simultaneously inserted into one of the aligned hole pairs and openings, respectively, and
    - the harness is held stationary relative to the chip by the holding means when the pins are inserted.

- 00000000000000000000000000000000
18. A method for electrically connecting a chip and a conductive contact pin,  
~~comprising mechanically holding the pin in a passageway in the chip while~~  
establishing and maintaining an electrical connection ~~between the pin and an~~  
electrical element embedded in the chip.
19. The connecting method recited in Claim 18 wherein mechanically holding  
the contact pin in the passageway is carried out by generating a frictional force  
acting on the pin.
20. The connecting method recited in Claim 19 wherein generating the  
frictional force is carried out by applying a normal force against the pin.
21. The connecting method recited in Claim 20 additionally providing the  
chip with a flexible conductive sheet electrically connected to the electrical  
element and having an opening aligned with the passageway, wherein the  
electrical connection is maintained and the normal force is applied by inserting  
the pin into the opening and deforming the opening.
22. The connecting method recited in Claim 21 comprising:  
    providing a plurality of passageways and openings; and  
    attaching a plurality of the pins to a rigid harness and spatially arranging  
the pins so that each of the pins can be simultaneously inserted into one of the  
passageways and the opening aligned therewith.

*Add 7  
a<sup>3</sup>*